

Role Playing: A Method to Forecast Decisions

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ABSTRACT

Role playing can be used to forecast decisions, such as “how will our competitors respond if we lower our prices?” In using role playing, the administrator asks people to play roles and uses their “decisions” as forecasts. Such an exercise puts subjects in the position of decision makers and can produce a realistic simulation of the interactions among conflicting groups. The basic design principle is that the role-play should match the actual situation in key respects: The role players should be similar to those being represented. The administrator provides short yet comprehensive descriptions and creates realistic surroundings in order to provide a realistic enactment of the situation. Role-players should read instructions for their roles before reading about the situation and should improvise when necessary. Role playing is most effective for predictions when few conflicting parties interact in response to large changes. A review of the evidence showed that role playing was effective in matching results for five of six classic experiments in psychology. In five other studies, researchers compared the accuracy of role playing with that of alternate procedures, typically expert opinions. Role playing was more accurate for predicting decisions in each study; overall, role playing was correct for 56 percent of 143 predictions, while unaided expert opinions were correct for 16 percent of 172 predictions.

Keywords: conflict situations, decision-making, expert opinions

Consider the following situations: (1) A union threatens to strike against an organization. The firm can meet some union demands, and it has one more chance to make an offer before the contract expires. Which of the feasible offers would

be most effective in reducing the likelihood of a strike? (2) A special interest group considers a sit-in to convince the government to provide subsidies to its members. The government believes the subsidy to be unwise and is willing to make only minor changes. How likely is it that a sit-in would succeed? (3) A firm selling industrial products to a small number of consumers plans a major change in its product design. The change is risky but potentially profitable. It wants to make the changes without its competitors' prior knowledge. Would the firm's three prime customers accept the changes? (4) A law firm is considering strategies for a defendant. Which defense would be most persuasive to the jury? (5) Some university professors are negotiating with the publisher of their journal to try to secure a better contract. The two parties are currently far apart, and failure to agree would be costly to both sides. What should the professors do to obtain a better contract?

In these situations, outcomes depend upon the interactions of two parties. In such cases, either party could use role playing to help it to accurately forecast its own decisions and those of the other parties. In fact, role playing has been used with apparent success in each of the above situations.

When one party incorrectly forecasts decisions by another party, the consequences can be damaging. For example, in 1975, a consortium sponsored by the Argentine government tried to purchase the stock of the British-owned Falkland Islands Company, a monopoly that owned 43 percent of the land in the Falklands, employed 51 percent of the labor force, exported all the wool produced, and operated the steamship run to South America. The stockholders wanted to sell, especially because the Argentine consortium was reportedly willing to pay "almost any price." However, the British government stepped in to prevent the sale. The actual solution in the Falklands (there was a war) left both sides worse off than before. In contrast, a sale of the Falkland Island Company would have benefitted both countries. Apparently, Britain did not predict the responses by the Argentine generals when it blocked the sale, and the Argentine generals did not predict how Britain would respond to its military occupation of the islands. Accurate forecasting by either side in this situation might have led to a superior solution.

People have used role playing to forecast the outcomes of many important conflicts. For example, Halberstam (1973, pp. 558-560) describes the use of role playing by high-ranking officers in the United States military to test the strategy of bombing North Vietnam. They found that a limited bombing strategy would fail to achieve the U.S. military objectives, that unlimited bombing had some military advantages, but that, overall, bombing would be inferior to a no-bombing strategy. Later, the U.S. president and his advisers decided that the best strategy was limited bombing. As role playing predicted, the strategy failed.

WHY ROLE PLAYING SHOULD IMPROVE ACCURACY

Because subjects simulate the situation, realistically role playing can be expected to accurately forecast decisions. In role playing, the subjects should adopt a realistic role, and they should try to mimic the interactions among the actual decision makers.

Playing roles may lead subjects to adopt certain biases. For example, Babcock *et al.* (1995) concluded from their studies that people in roles have a self-serving bias. However, an advantage of the role-playing procedures is that the analyst need not identify or speculate about what biases might occur. Such knowledge is unlikely to aid prediction. Instead, the key is to provide realistic roles so that biases that are likely to occur in the real situation occur in the role playing. When biases exist, role playing becomes all the more important.

The outcomes of situations in which people interact are difficult to forecast because one must forecast each of a series of actions and reactions by the parties involved. For example, given that party A proposes change in a negotiation, one must predict party B's initial reaction, A's subsequent reaction, B's subsequent reaction, and so on until they reach an outcome. The uncertainty about each party's actions and reactions at each stage makes it difficult to forecast outcomes. Role playing should be advantageous because it simulates the interactions.

BASIC ELEMENTS OF ROLE PLAYING

To employ role playing, a forecaster asks subjects to put themselves in specified roles and then to either imagine how they would act, act out their responses alone, or interact with others in the situation. The parties in the actual situation can be represented by an individual, by a group, or by a computer program.

Clearly what roles people play affects their behavior. In an experiment by Cyert, March, and Starbuck (1961), subjects presented with the same data made substantially different forecasts depending on whether they were given the role of "cost analyst" or "market analyst."

In using role playing, a forecaster should try to match the decision-making situation as closely as possible, aiming for realism in casting (who to involve), role-instructions (what instructions should be given to the role players?), situation description (how to describe the situation), and session administration (how to administer the role-play). I discuss each of these topics along with coding (how to interpret results) and the number of sessions needed.

Realistic Casting

C Those playing roles should be similar to the people they represent.

Similarity of background, attitudes, and objectives would seem to be important. However, the little evidence available suggests that casting is not critical. For example, researchers using students have described their results as realistic (e.g., Zimbardo 1972). Mandel's (1977) review of research on political role playing led him to conclude that researchers obtained similar results whether they used experts or novices. In related research, Ashton and Krammer (1980) found considerable similarities between students and non students in studies on decision-making processes. My advice on casting, then, is to obtain similar subjects if the cost is low; otherwise, obtain somewhat similar subjects.

The number of subjects on role-playing teams should correspond to the number in the actual situation. If this is not known, using more than one person to represent each party may be helpful. Most of the research to date has used two individuals to represent each group. This advice rests only on face-validity.

Role Instructions

C Instruct subjects in their roles before they read the situation description.

Their roles affect subject's perceptions of a situation. Babcock *et al.* (1995) suggest that playing a role might lead to a self-serving bias. They had 47 pairs of subjects read their role instructions *before* reading the description of a law case and 47 pairs that read their roles afterward. The subsequent role-playing outcomes differed between these two. However, this study dealt with only a single event.

C Ask the role players to act as they themselves would act, given the role and the situation, or ask them to act as they believe the persons they represent would act.

As Kipper and Har-Even (1984) show, differences in the orientation of the role players can lead to substantial differences in outcomes, which could affect predictive accuracy. It is not clear, however, if it is best to ask players to act as they would act or as they think the actual decision maker would act. We need further research. Lacking such research, my advice is to run some sessions asking subjects to act as they would act in this situation and some sessions asking them to act as they think the decision maker would. The resulting forecasts can then be combined. If the forecasts differ substantially, however, one can have little confidence in the results.

C Instruct players to improvise, but to remain within their roles.

The advice to improvise is based on common sense and experience. It is, therefore, speculative.

Description of the Situation

C Describe the situation briefly, accurately, and comprehensively.

Subjects will not be able to retain much information; thus, short descriptions are desirable. Keep them to less than one page if possible. However, they need comprehensive and accurate information. The descriptions should include information about each of the participants and their goals, a history of their relationships, current positions, expectations about future relationships, the nature of the interaction, and the particular issue to be decided.

Preparation of the situation description requires a good understanding of the situation and much care and effort. One should pretest the written description to make sure it is understandable and comprehensive.

How the situation is described may affect the responses in unintended ways. For example, emotionally charged words may cause a bias. Thus, it may be worthwhile for collaborating researchers to prepare descriptions of the situation independently. The subjects could then be divided into groups, each receiving a different description of the situation. One could then compare the responses to the different descriptions.

C Specify possible outcomes for the role players when feasible

Having role players choose among specified possible outcomes will make coding results easier. If the possible outcomes are not obvious, one must leave the choice open to avoid introducing bias. No direct evidence is available to support this advice.

C Provide realistic surroundings.

To provide realism, one might ask participants to dress appropriately, as Janis and Mann (1965) did for role-play between doctor and patient. Or one might use a realistic location, as Zimbardo (1972) did for prison simulation. In each of these studies, the subjects became emotionally involved. However, these studies did not involve prediction.

Administration

C Ask participants to act out their responses.

Merely thinking about what one would do lacks realism. Active role playing is more representative of the behavior to be predicted. Subjects could talk or write. Greenwood (1983), after reviewing studies on role playing in psychology, reached the same conclusion on the need for active involvement.

C Ask subjects to interact in a way that matches the actual decision-making situation.

In some cases, one might ask a subject to adopt a role and then make decisions in response to some stimulus materials. In other cases, two groups of subjects might conduct face-to-face meetings. In still other cases, with the help of an administrator, groups might exchange information about their actions.

When several people or groups play roles, the participants within each group should discuss their roles before interacting. This will help them to make their role playing realistic.

Some researchers have taken elaborate steps to achieve realism. Moynihan (1987) describes a role-playing procedure that lasted eight weeks. Mandel (1977) claimed that the Pentagon spent large sums for a role-playing session. However, inexpensive approaches to realism seem adequate. Elstein, Shulman, and Sprafka (1978) compared elaborate versus simple role plays of doctor-patient interactions and found few differences between them. While elaborate simulations can achieve more realism, we have little evidence that their gain in accuracy justifies their added cost.

Coding

The outcomes from sessions are used as the prediction. For example, if managements' offer to a union leads to a strike in four out of five role-playing sessions, one would predict an 80 percent chance of a strike.

C To reduce chances for misinterpretation, ask role players to write their view of the outcome.

Ask all role-players to report their final decisions. This is done because the decision may be perceived differently by each party.

In some cases such as agreeing to a contract, the reporting is simple. Sometimes, however, the role players will not reach a conclusion. In such cases, ask participants to write down what they think the outcome would have been had the interactions continued.

C If interpretation of the outcome is required, have independent coders code the responses.

Using more than one coder increases reliability. The coders should not be aware of the purposes of the study and they should work independently. This principle is based on standard research methodology. Videotaped role-playing sessions may be useful in such cases, and they would allow for further coding.

Number of Sessions

C Base predictions on results from a number of role-playing sessions.

Each role-playing session can provide the forecaster with one sample observation per group. Thus, a role-playing session with two parties would yield two forecasts. They would be highly correlated. They would differ only if their perceptions on the agreement differed or if they had to project what the agreement would have been had the role play proceeded to a conclusion. To obtain a reliable prediction, one would want to have a number of observations, each based on a different group. To obtain a valid prediction, one would also want to vary key elements of the role play, in particular, the description.

I think that one should run at least 10 sessions, five using one description and five using another. If the responses differ greatly across groups, then run more sessions. If the responses are sensitive to the description or to other aspects of the administration, then create additional descriptions and run more sessions using them.

CONDITIONS FAVORING THE USE OF ROLE PLAYING

C Role playing is more effective for situations in which a few parties interact than for those in which no parties or many parties interact.

Role playing may be used in predicting decisions by an individual who does not interact with others directly. However, we can expect role playing to be most effective (relative to other methods) for situations in which parties interact.

It is easiest to mimic situations in which only two parties interact. Where many parties represent different viewpoints, matching the role play to the situation will be difficult. Armstrong (1987) examined the use of role playing when many parties were involved. Since 1908, Washington and Lee University has run mock political conventions to select a presidential candidate for the party that is not in office. In effect, this is a complex role play with people representing many states, interest groups, and politicians. W&L's convention is usually held two or three months prior to the actual convention. Through 1984 the convention correctly predicted 13 of 18 candidates. (During this period, it was common that the candidate was not predetermined.) Public opinion polls have been conducted since 1936, and the candidate who was leading in the poll conducted at about the same time as the Washington and Lee convention won the nomination on eight of 12 occasions. During this period, the convention was also correct on eight of 12 occasions. Thus, role playing offered no advantage over surveys in this situation.

C **Role playing is more useful when the parties interacting are in conflict.**

In their study of negotiations over the price of a car and over the price for a company, Carroll *et al.* (1988) concluded that deliberations often deviated from normative logic. Experts are probably better at identifying what *should* happen than what *will* happen. Role playing may be more useful in such situations than expert opinions.

In many conflicts, the parties have opposing objectives or differing strategies. Differences in objectives occur, for example, when the seller is trying to get a high price for a product while the buyer seeks a low price. An example in which groups pursue different strategies is to be found among those trying to reduce teen pregnancies: some want the state to provide free condoms while others advocate ending government support for teenage mothers.

C **Role playing is more useful in predicting in situations involving large changes**

Experts have difficulty predicting the results of large changes or unusual events. This might be due to environmental changes or to actions of one of the parties. The difficulties are because the changes are outside the experts' experience. Given its greater realism, role playing's accuracy should be superior to judgment in such cases.

EVIDENCE ON THE VALUE OF ROLE PLAYING

To find published evidence on role playing, I examined the *Social Science Citation Index for the Social Sciences* from 1978 through early 1998 and contacted researchers who had done related work.

Although role playing is widely used in the legal profession, little evaluation has been done (Gerbas *et al.* 1977). Similarly, despite widespread use of role playing in psychology, little has been done to assess its predictive validity (Kerr *et al.* 1979; Greenwood 1983). Nevertheless, some evidence exists.

Face Validity

Some studies attest to the face validity of role playing. Orne *et al.* (1968), found that observers could not distinguish between subjects who were hypnotized and those who were role playing a hypnotic trance. Zimbardo's (1972) simulation of a prison was so realistic that it was terminated prematurely for fear someone might harm a "prisoner." Janis and Mann's (1965) role play between doctor and patient led to emotional responses by the subjects, and these led to long-term reductions in smoking.

In the late 1960s and early 1970s, psychologists proposed using role playing as an alternative to laboratory experiments, largely in response to a concern about the deception of subjects. I reviewed the literature and found six studies that used

active role playing in an effort to replicate subjects' decision making in classic experiments on blind obedience, conformity, bargaining, attitude change, and affiliation. Typically, the subjects were placed in settings similar to those used for the experiments. They were asked to adopt the role of a subject and to imagine that this was a real experiment as they responded to a script. In five studies, the behavior in the role play was similar to that in the published experiment (Greenberg 1967, Horowitz and Rothschild 1970, Houston and Holmes 1975, O'Leary 1970, and Willis and Willis 1970.) Only one study, (Holmes and Bennett 1974) produced substantially different results.

Predictive Validity of Alternate Methods

The key issue is how well role playing performs in comparison with alternate methods. In this section, I examine alternate methods for forecasting decisions.

Expert opinion: People with experience in similar situations can probably make useful predictions. For example, Avis executives can probably forecast actions by Hertz executives. Expert opinion is especially useful in predicting changes that are within the experts' experience, which implies that it is useful for predicting small changes.

Intentions surveys: One possibility is to ask participants how they will act in a given situation. Besides having information about the environment, participants may understand their own motivations. On the negative side, participants may lack insight about how they (and others) would behave especially when faced with large changes. Also, they may be unwilling to reveal their true intentions in socially delicate situations. Morwitz (1999) discusses intentions as a predictive tool.

Extrapolation by analogies: By examining analogous situations, one may be able to predict for a new situation. For example, the issue of fluoridation of water supplies has led to conflict in various communities, so the outcome of a new case could be predicted by examining similar cases (e.g., 'In what percentage of similar cases did the proponents of fluoridation win?').

One of the primary difficulties in using analogies is selecting an appropriate set of cases to match the situation. This was illustrated in a study (Stewart and Leschine 1986) that supported the decision to establish an oil refinery at Eastport, Maine. The analysts rejected the use of worldwide estimates of tanker spills and instead relied on a comparison with one British port, Milford Haven. Although Stewart and Leschine believed this to be the best comparison, using a single case is risky. Also bias could easily enter into the selection of a single analogous case. To prevent such problems, it helps to

select many analogous situations. In the case of oil spills, it might be possible to rate all ports for similarity (without knowledge of their oil spill rates) and then select a sample of those most similar to the situation being examined.

Analysts can extrapolate from analogous situations to assess alternate strategies, but they need many similar cases to draw upon. This method is not useful for large changes, new strategies, or new situations.

Game theory might be used to analyze an analogous situation. To do this, the analyst would need to translate information about actual situations into a game theory framework. It could be difficult to obtain enough information to create a good match between the game and the actual situation. Also, despite much work on game theory, its predictive validity has not been tested. For example, in their book about game theory Brandenburger and Nalebuff (1996) extol its virtues for understanding business situations, but do not report any studies of predictive validity. I have tried to find such studies but have been unsuccessful.

The key features of a situation might be translated into a laboratory experiment. Laboratory experiments are common in marketing research. Economists now use experiments to study problems.

One can use field experiments in analogous situations to add realism. Thus, one could experiment with fluoridating the water supply in a few cities before extending the program to other cities, and one could examine different change strategies in different cities. Field experiments are often used in marketing to predict the likely success of new products by testing them in certain geographical areas. The disadvantages of the field experiment are that there is a loss of secrecy, that expenses are high, and that people may act differently during the experiments than they would in the real situation.

Testing Procedures

Analysts could compare playing and alternate methods in contrived situations or actual situations. Actual situations provide higher external validity, but the controls are fewer and the costs higher. Contrived situations, such as laboratory experiments, may have less relevance to the real world, although Locke (1986) reports a surprisingly high correspondence between the conclusions of field studies and those of laboratory studies.

Evidence from prospective studies (i.e., forecasts whose outcomes are not yet known) would be most useful. However, most research has concerned “retrospective” studies. Such studies are problematic because, even when it is possible to disguise past events, researchers may choose interesting situations that would be surprising to experts. In other words, the selection of situations may be biased toward those where expert opinions provide poor forecasts.

Results from Contrived Situations

Kerr *et al.* (1977) conducted an experiment to compare real and mock juries in a contrived situation. They led the “real” jurors to believe that their verdicts would be used to determine an academic violation at a university. On a predeliberation questionnaire (in their roles as jurors, but before they deliberated in a jury), about half of the 117 mock jurors reported that the defendant was guilty. For six-person juries, assuming the initial majority prevails, this means that about half of the juries would reach a guilty verdict. However, only eight percent (one in 12) of the “real” juries reached a guilty verdict. The mock jury results were similar to those from the real jurors in that none of ten juries reached a guilty verdict.

Mixon (1972) used active role playing to predict obedience in Milgram’s (1974) study in which subjects were asked to shock a “learner”. In Milgram’s experiment 65 percent of the subjects were completely obedient and the average shock they administered was 405 volts (maximum was 450 volts). Of Mixon’s 30 role players, 80 percent were fully obedient and the average shock level was 421 volts. In contrast, when Milgram had asked 14 psychology majors for their expert opinions as what percentage of people would be fully obedient, they had estimated only one percent.

Actual Situations: Design of the Studies

I have conducted a series of studies on role playing. Typically, I scheduled subjects in two groups of two people each for 80-minute sessions. Upon arrival at the testing site, they were randomly paired and told that they would face a situation requiring their decision. They received a set of closed-ended questions designed to cover the range of possible outcomes. The order in which the situations were presented was randomized across sessions. The sessions were assigned randomly to call for either opinions or role playing.

Expert opinion sessions: Subjects were told that they had all relevant information and that their job was to reach consensus about what would happen in the situation. For each question on the questionnaire, they were to choose the response that most closely matched their prediction of the outcome.

Role-playing sessions: The subjects in each pair were randomly assigned to the roles of two parties in a conflict (e.g., they could be either owners or players in the National Football League). The background information they read was intended to make the situation sound realistic and to support that party’s position.

After reading and preparation time of no more than 20 minutes, the two pairs of adversaries met at a conference table. They were given information about the setting. For example, in the Philco Distribution situation, the role players were told

they were meeting at the supermarket chain's headquarters. For the Dutch Artists situation, the meeting was held "in the museum where the artists were conducting a sit-in."

The role-plays lasted until the adversaries reached consensus or the time limit. At the end of the role-play, the two pairs separated and each individual answered questions based on their experience. They were instructed to state the consensus as they saw it, or if they had reached no consensus to state what they thought would have happened had their meeting been allowed to run to a conclusion. Each role-playing session provided two responses, one from each group.

Role Playing Without Interactions Among Parties

In another study (Armstrong 1977), I asked subjects to play the roles of seven members of the board of directors of the Upjohn Corporation. They were confronted with a recommendation sent from the U.S. Food and Drug Administration (FDA), that Upjohn's drug Panalba be removed from the market. This recommendation was based on a 20-year study by an unbiased group of medical scientists who were unanimous in their recommendation. The board met, but there was no representative from the FDA. They had 45 minutes to agree on one of the following five decisions:

- (1) Recall Panalba immediately and destroy;
- (2) Stop production of Panalba immediately but allow what's been made to be sold;
- (3) Stop all advertising and promotion of Panalba, but provide it for those doctors who request it;
- (4) Continue efforts to market Panalba most effectively until sale is actually banned;
- (5) Continue efforts to market Panalba most effectively and take legal, political, and other necessary actions to prevent the authorities from banning Panalba.

I continued to run such role-playing sessions after 1977. In all, sessions have been conducted in 12 countries over a 17-year period through 1988. Of the 83 groups in the condition designed to match that faced by Upjohn, none decided to remove the drug from the market. Furthermore, 76 percent decided to take decision 5, which was the decision that Upjohn actually chose. In contrast, when I asked 64 people (mostly economists) to predict the outcome, only 34 percent predicted that Upjohn would take that decision.

Clearly the roles affected decisions. When asked what they would do as individuals (with no assigned role), only two percent of 71 respondents to a questionnaire said they would continue efforts to market Panalba (decision 5). When Brief *et al.* (1991) presented this case to 44 individuals and asked them to adopt the role of a board member and to submit their vote for a meeting that they could not attend, 39 percent said they would remove the drug from the market. However, when subjects played the role of board members, none of the groups selected this decision.

Role Playing with Interactions to Predict Decisions

Most of the evidence on the use of interactive role playing to predict decisions comes from retrospective studies. The researchers disguised the situations so that subjects would not be influenced by knowing what actually happened but did not alter any key elements in the conflict. As a check, they asked subjects if they could identify the situation, and none could. In this section, I describe studies conducted by Armstrong (1987) and Armstrong and Hutchinson (1989).

The “Distribution Plan” describes a 1961 plan by the Philco Corporation to sell major appliances through a supermarket chain. Customers at participating supermarkets could obtain a discount on their monthly installment payment for an appliance in the amount of five percent of the total of their cash register tapes. The payment of the discount was to be split between Philco and the supermarket. Philco wanted to predict whether a supermarket would accept the proposed plan. Subjects faced three decision options. In the role playing, the supermarket representatives accepted the plan 75 percent of the time. Only three percent of the subjects providing expert opinions predicted that the supermarket would accept the offer. In fact, the supermarket chain had accepted the offer. (It turned out to be an ill-fated relationship, but that is another story.)

The “Dutch Artists” study is based on a situation the Netherlands government faced. Artists staged a sit-in at the country’s major art museum in an effort to obtain government support for artists who were unable to sell their work. Subjects had to choose from among 516 possible decisions. In 29 percent of the role-playing sessions the government gave into the demands (the actual outcome), whereas only three percent of the “experts” predicted this outcome.

In the “Journal Royalties” case, a new journal was an academic and financial success. The editors, however, were unable to cover their expenses out of the royalties granted to them under the initial contract with the publisher. They believed that the publisher was earning substantial profits. Furthermore, the editors were not satisfied with the publisher's level of service nor with its marketing efforts for the journal. The initial contract ran out, and the editors were to meet with the publisher to negotiate a new contract. The publisher's negotiators said that they could not offer higher royalties because they had to recover the start-up costs incurred during the first three years of the journal. Subjects were presented with four possible decisions. Role players were unable to reach agreement in 42 percent of the sessions (the actual outcome), whereas only 12 percent of the 25 experts predicted such an outcome. Although neither approach was correct most of the time, role playing would have suggested more consideration for the possibility that no agreement could be reached. In fact, I was one of the negotiators, and my expert opinion, held with confidence, was that there was a low probability that we would fail to reach an agreement. Unfortunately, we did not use role playing prior to the actual negotiation.

A prospective study, “NFL Football,” describes the conflict faced by the National Football League's (NFL) Players Association and the owners of the teams. We based our description of the conflict on reports published on February 1, 1982, when no negotiations had taken place. The existing contract was scheduled to expire in July 1982. The NFL Players Association said they would demand 55 percent of the football clubs' gross revenue to be used for players' wages, bonuses, pensions, and benefits. Subjects could chose among three decisions. Role playing led to a strike 60 percent of the time. In contrast, only 27 percent of the “expert” subjects predicted such an outcome. An insurance company was issuing policies based on its estimate of a much lower probability of a strike. In fact, there was a strike.

Summary of Comparative Studies on Decision making: In each of the six situations, role playing was more accurate than alternate methods for predicting decisions (Table 1). Role playing proved accurate for 56 percent of the forecasts while opinions proved accurate for only 16 percent. Predictions based on opinions were less accurate than selected randomly from among the options (the “chance” column), where one would have been correct 25 percent of the time, on average.

Table 1
Accuracy of Role Playing vs. Expert Opinions for Cases Involving Important Conflicts

Situation	Parties in Conflict	Chance	Percent Correct (Number of Predictions)			
			Opinions		Role Play	
NO INTERACTION						
Panalba (drug)	Stockholder vs. others	20	34	(64)	76	(83)
INTERACTION						
Retrospective						
Distribution Plan	Manufacturer & retailer	33	3	(37)	75	(12)
Dutch Artists	Artists & government	16	3	(31)	29	(14)
Journal Royalties	Publisher & editors	25	12	(25)	42	(24)
Prospective						
NFL Football	Players & owners	33	27	(15)	60	(10)
Averages (unweighted)		25	16	(172)	56	(143)

Might the effects be due to subjects simply knowing about the roles rather than the interaction? To test this, we gave role descriptions to 48 pairs of subjects in the opinions condition for the “Distribution Plan” and “Dutch Artists” situations. I asked subjects to discuss the situations from the perspective of the decision makers described in the role materials and then to predict what would happen. Their opinions were almost identical to those of groups that had received no information

about the roles (Armstrong 1987). Thus, the superiority of role playing over expert opinions in these two situations was due primarily to the interactions, not to information about the roles.

Role Playing to Predict Outcomes

I have focused to this point on forecasting decisions. Some studies have examined the use of role playing to predict outcomes such as how a given person will perform in a situation. Here again, one can ask whether role playing produces better predictions than other procedures.

Role playing can be an aid to prediction because it allows different subjects to face the same situation. Tamblyn *et al.* (1994) used role playing by a trainee doctor to predict her ability to communicate with patients. They based their predictions on the trainee's interviews with five "standardized patients." Their resulting predictions of patient satisfaction had some validity for a situation in which faculty ratings and self-ratings had proven to be ineffective.

Kadden *et al.* (1992) found that when subjects responded on tape to tape-recorded descriptions of various social situations in which drinking alcohol was portrayed negatively, their responses were correlated to reductions in the urge to drink in follow-up studies conducted after 6, 12, 18, and 24 months.

Borman (1982) recorded 16 experienced recruiter's assessments of 57 soldiers entering a U.S. Army school to train to become recruiters. Predictions based on first impressions were uncorrelated with success in training (average $r = .02$), scores of tests designed to predict success in military recruiting were also poorly correlated with success (average $r = .09$), as were structured interviews (average $r = .11$). In contrast, each of five role-playing exercises was correlated to the three criteria measures in the expected direction (with one exception) in the 15 tests; over half of the correlations were significant at .05, and the average correlation coefficient was .27.

Randall, Cooke, and Smith (1985) used role playing to predict the success after six months of people who had just been hired as life insurance sales agents. The role plays were evaluated independently by four assessors and by a predictive model, based on actual outcomes for 36 participants. The model, using two key variables from the role play, was used to predict success for a holdout sample of 24 newly hired sales agents, of whom 14 were no longer employed after the six months. The model correctly predicted outcomes for 79 percent of the not-employed agents and 80 percent of the employed agents. This was considerably better than chance (51.4%), and it is impressive given that the company had used extensive screening procedures in hiring these 24 salespeople.

LIMITATIONS

Students were used as subjects for most experiments. Although this has not generally been a problem for studies of decision-making processes, it might pose a problem in our studies. Students might be less accurate for the role-play predictions and for predictions from expert opinion sessions. It is not known whether the deficiencies might be stronger for role playing or for the expert opinions.

IMPLICATIONS FOR PRACTITIONERS

The evidence supports the use of role playing. In comparison with expert opinions, it provides greater accuracy. While role playing is more expensive than the use of expert opinions (perhaps twice as costly), it would typically be much cheaper than realistic experiments.

Besides providing better forecasts, role playing can enhance understanding. Experts often face difficulties in gaining perspective on each of the parties in a conflict. In such cases, people often assume that others will respond as they themselves do (Messe and Sivacek 1979). A lack of perspective would be especially likely when the expert is a party in a conflict. For example, Nestle did not seem to understand the perspective of the protest group, INFACT, when it objected to Nestle's marketing practices in third world countries for an infant formula (Hartley 1989). Another example is Coca Cola's failure to understand the objectives of a substantial group of Coke consumers to its new formula and a consumer protest group was formed (Hartley 1989). Role playing provides participants with information about how they feel about others actions and how others react to their actions. A party in a conflict would have difficulty thinking through these cycles of action and reaction.

Decision makers can use role playing to test new strategies that they have not previously encountered. Also, if possible outcomes are not pre-specified, role players might identify outcomes that experts did not consider.

Role playing has been used for predictions in many situations. It has long been used in the military; Goldhamer and Speier (1959) reported that Germany used it in 1929 to plan war strategy. It has been used commercially for jury trials (Cooper 1977). Leeds and Burroughs (1997) report its use for personnel selection. Busch (1961) described a role-playing procedure used by the executives of Lockheed Corporation to forecast the reactions of their major customers. This procedure allowed Lockheed to experiment with various options before actually making them available to the airlines. Busch concluded that this procedure yielded accurate predictions but did not formally test this claim.

IMPLICATIONS FOR RESEARCHERS

Little research has been done on the various procedure for conducting role-playing sessions. In particular, we do not know whether it is best to ask role players to "act as you would act in this situation" or to "act as you think the person you represent would act."

Research is needed to test the reliability and validity of the findings. For example, most subjects were students, and they may have difficulty in making "expert predictions."

To date, role playing has been more accurate than alternate procedures. However, no direct evidence exists to compare role playing with experiments or with game theory. I would expect experiments, while more expensive, to be superior to role playing if the experiments closely match the situation. I suspect that game theorists will have difficulty in matching situations, and as a result, game theory would prove to be less accurate than role playing. However, these expectations are based only on speculation. It would be interesting to compare the predictive abilities of role playing and game theory in conflict situations.

SUMMARY

Given its ability to match situations, role playing seems to be an ideal way to forecast decisions in situations in which people interact. The basic principles are as follows:

- ⊆ Active role playing is the preferred method for predicting decisions in situations in which parties interact. It is especially useful when
 - ⊆ a small number of parties interact,
 - ⊆ they are in conflict,
 - ⊆ the conflicts involve large changes in the situation
 - ⊆ little information exists about similar events in the past.

In trying to forecast the outcome of a decision-making situation, the analyst should ensure that the role playing matches the actual situation. This analyst should aim for realism in casting, in role instructions, in descriptions of the situation, in administrative procedures, and in interaction among groups. Next to experimentation, role playing can provide the most realistic representation of interactions among different parties. It can be viewed as a low-cost and confidential alternative to experimentation. Indeed, in five out of six studies in psychology, role playing produced outcomes that were similar to those from experiments.

Evidence from five actual situations showed that role playing is more accurate than other methods (primarily opinions) for predicting decision-making outcomes for important conflicts between groups. Role playing produced correct predictions for 56 percent of the situations versus about 16 percent for opinions. Finally, role playing provided

better predictions than traditional methods in three studies to predict the success of novice doctors, military recruiters, and life insurance sales people.

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